

## ABSTRACT OF THE DISCLOSURE

In accordance with a dynamic and recursive method, the number of required ADMs for a given set of light-paths in an OWDM ring network can be minimized. In one formulation of the minimum ADM problem, the method aims to create as many circular segments among the set of light-paths in the OWDM ring network as possible, and to form as few non-circular segments as possible from the remaining light-paths such that the number of shared ADMs can be maximized. In one example, the method of the invention operates in two phases: in the first phase, a dynamic and recursive searching for all the possible circular segments among the light-paths is employed, after which the concatenated circular segments are removed from further processing. Next, a reverse recursive searching among the remaining light-paths for concatenated non-circular segments with as many light-paths as possible is conducted.

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